

# W5YI

America's Oldest Ham Radio Newsletter

## REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable.

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## Controversial Amateur's License Will Not Be Renewed!

It looks like Herb Schoenbohm's, ex-KV4FZ of Christiansted, U.S. Virgin Islands hopes of remaining a licensed ham operator have come to an end.

On February 29<sup>th</sup>, a circuit judge of the U. S. Court of Appeals for District of Columbia affirmed the FCC's decision to deny Schoenbohm's Extra Class license renewal on the basis of his prior felony conviction and his lack of candor during the subsequent investigation.

In *Herbert L. Schoenbohm vs. FCC*, No. 98-1516, Schoenbohm had challenged the Commission's denial of his request for reconsideration for renewal of his amateur license. FCC lawyer, James M. Carr argued the case on October 18, 1999.

### **Background**

We first wrote about Schoenbohm's difficulties in 1990 when letters and comments began circulating within the amateur community about his off-the-air conduct. (See Dec. 1, 1990 issue, page 9). It has taken ten years to close the book on the case.

Supposedly he made thousands of unauthorized phone calls using a computer program or a "blue box" in 1987 to infiltrate the *Caribbean Automated Long Line Service, Inc. (CALLS)* of St. Thomas. Schoenbohm called it nonsense and said that amateurs were just antagonized by his controversial on-the-air communications.

But after a lengthy U.S. Secret Service investigation, Schoenbohm was indicted on December 17, 1991 on federal charges that he used counterfeited telephone access devices to make more than \$1000 worth of long distance calls. Schoenbohm, then the Chief of Communications for the Virgin Islands police department, was ordered to turn in his badge, ID, radio and department vehicle.

KV4FZ, whom a January 1992 *St. Croix Avis* newspaper article hailed as a "...Hurricane Hugo hero (for his emergency ham radio communications work) and founder of the *Better Amateur Radio Federation (BARF)*" was charged with telephone toll fraud by using illegally accessing the CALLS telephone network. Schoenbohm was also Vice Chairman of the Virgin Islands Republican party at the time.

*[Editor's Note: Back in 1984 when the Republican National Convention was held here in Dallas, Texas, Schoenbohm assisted your author - Fred Maia, W5YI - in attending. We wanted to hear Barry Goldwater's (K7UGA) keynote speech and KV4FZ arranged for us attend the convention as a part of the Virgin Islands delegation. It was quite an experience being on the floor of a major political convention!]*

Fraud apparently was a major problem for CALLS and they were eventually forced out of business. Owner Malcolm Ford, claimed that "There were thousands of [illegal] calls... [and] directly



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attributable to Schoenbohm was at least \$2,000 plus." Herb KV4FZ was arraigned in mid-January 1992 and faced a maximum fine of \$10,000 and a 10 year prison sentence.

During the trial, Schoenbohm was portrayed as a criminal who had defrauded CALLS out of hundreds of thousands of dollars. The prosecution produced 20 witnesses from various U.S. locations, including agents from the Secret Service, the U.S. Marshall's Service, Treasury Department, and the Federal Communications Commission.

Witnesses testified at the trial that Mr. Schoenbohm had telephoned them at the exact same time that records showed that calls were placed to their numbers using the illicit access codes. A Secret Service agent testified that Schoenbohm admitted possessing access codes and asked to cut a deal to avoid losing his job with the Virgin Islands Police Department. Another witness testified that he heard Schoenbohm broadcast on a ham radio how to obtain illicit access codes.

Schoenbohm argued that there was much political pressure to get him tried and convicted since he had been writing unfavorable articles about Representative DeLugo, a non-voting delegate to Congress from the Virgin Islands.

## Schoenbohm convicted of a felony

On April 24, 1992, Schoenbohm was convicted of a felony for fraudulently obtaining free long distance telephone services. He was found guilty of violating 18 U.S.C. § 1029(a)(1), which provides that anyone who "knowingly and with intent to defraud produces, uses, or traffics in one or more counterfeit access devices" commits a felony. The statute defines "access device" as "any card, plate, code, account number ... or other means of account access that can be used ... to obtain money, goods, services, or any other thing of value."

Schoenbohm was originally sentenced to a month imprisonment in a federal penitentiary which was to be followed by a month of home detention and a \$5,000 fine. That sentence was later reduced to two months home detention, 2 years probation and a \$5,000 fine. The Third Circuit Court of Appeals affirmed the conviction and pleadings to vacate the conviction were denied. Schoenbohm was allowed to go to work (he became a broadcast "talk" show host and newspaper columnist) and to church ...but no social functions.

Just before Schoenbohm's Extra Class amateur radio license was due to expire on March 2, 1994, KV4FZ filed a renewal application with the FCC. Schoenbohm had a history of being very controversial on the HF ham bands and some ham operators wanted his license

pulled. And they made certain that the Commission was very much aware of his conviction.

In 1995, the FCC designated Schoenbohm's Extra Class license renewal application for a hearing to determine if he possessed the proper character to remain a Commission licensee. KV4FZ was permitted to operate his station past expiration until a decision was made. The hearing was held in Washington DC on August 8, 1995.

The FCC said it also believed that Schoenbohm violated the ex parte rules which provides that "No person shall solicit or encourage others to make any presentation he or she is prohibited from making..." Supposedly on April 3, 1995, Schoenbohm transmitted information on 14.313 MHz that he "...is not permitted to make any requests for 'political intervention' in this matter, but other people could do so on his behalf." He then provided the name, address and telephone number of Congressman Victor Frazier." Schoenbohm denied the accusation.

## FCC concludes renewal not in public interest

FCC said that "Mr. Schoenbohm's conviction of a felony involving fraudulent conduct reflects on his propensity for truthfulness. ...[He] not only has failed to present any evidence that he has a reputation for truthfulness; he has provided through his testimony, additional evidence indicating that he cannot be relied upon to tell the truth by giving inconsistent, incredible and misleading testimony. ...Mr. Schoenbohm's felony conviction also reflects on his propensity to obey the law."

The Commission concluded that in light of his conviction ...Herbert L. Schoenbohm was not qualified to renew his amateur service license.

The Circuit Court said "...the FCC did not deny Schoenbohm's renewal application because he violated, or attempted to violate, the ex parte rules. Nor did it do so because of what he said to his fellow radio operators. Rather, the FCC denied the application because Schoenbohm made misleading statements to the agency itself, and it is well established that the First Amendment does not protect mis-representations made in administrative adjudications."

"For the foregoing reasons, we conclude there was substantial evidence to support the FCC's findings that Schoenbohm made misrepresentations and lacked candor in his testimony regarding both his felony conviction and his efforts to induce ex parte communications with the Commission. We further conclude that the FCC acted reasonably in deciding that Schoenbohm's 'lack of candor and misrepresentation along with the felony conviction together' justified non-renewal of his licenses."

"The FCC's decision denying appellant's application for renewal of his amateur radio licenses is affirmed."



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## K1MAN APPEALS DISMISSED LAWSUIT

Glenn Baxter, K1MAN, is the controversial manager of IARN, the International Amateur Radio Network and the Executive Director of the AARA - the American Amateur Radio Association. His daily IARN Amateur Information Bulletin Service began on 80 (3.975 MHz) and 20 meters (14.275 MHz) in 1987 and became a ham band "talk show" in 1995. In October 1990, Baxter received a \$1,500 fine for allegedly causing interference to a QSO in progress and for repeated violations of the amateur rules against broadcasting.

The FCC said that just because Baxter had published a schedule did not permit him to interfere with ongoing communications. Baxter filed an *Application for Review*, a type of appeal to the full Commission but it has never been acted on. K1MAN received two more fines and when they were not paid, the FCC turned them over to the U.S. Attorney for collection.

When the FCC failed to act against interference to his IARN broadcasts, Baxter took it upon himself in 1994 to send out what he called "Standard Felony Complaint Affidavits" to other amateurs who interfered with his (3.975 MHz) IARN Network Bulletin Service. On January 23, 1995, the FCC ordered K1MAN to stop sending out the letters and suggested that he may lack the qualifications needed to hold an FCC license. Baxter called the FCC letter "emotional, unprofessional and preposterous."

On February 8, 1995, Baxter filed formal criminal charges with the Justice Department against both the ARRL and the FCC. He said his bulletins were legal "...have to be somewhere, and once established, it is a violation ...to intentionally interfere with them." He said he tried to negotiate with other amateurs in compliance with the rules which mandate cooperation, but was not successful. He believes that the FCC is encouraging the interference by not acting on his complaints.

On May 14 and 15, 1999, agents from the FCC's Boston field office monitored Baxter's transmissions on 3.975 MHz and attempted to inspect his station. But FCC personnel were unable to find anyone - either at Baxter's station at the tip of Long Point which was transmitting at the time or at his nearby residence at Point Road. And there were no vehicles on the premises.

On June 25<sup>th</sup> FCC Enforcement attorney Riley Hollingsworth sent a letter to Baxter wanting to know the whereabouts of the required control operators during the times of operation noting that "...from your web page, and from our own monitoring, that your Amateur Radio station K1MAN makes daily radio transmissions apparently totaling 110 hours per week."

Baxter initially responded by issuing a press release saying that the letter came after the FCC was served with K1MAN's \$10 million libel suit against both the FCC and the Dept. of Justice. The lawsuit stems from a story pub-

lished in QST and FCC letters contending that the FCC had made a determination that he had caused "willful interference" to radio communications. He said his timer-controlled transmissions were no different than those of the timer-controlled ARRL headquarters station W1AW.

K1MAN was given 30 days to answer the Hollingsworth letter. Baxter's answer, however, failed to provide the information wanted and another letter was sent out on August 4<sup>th</sup> asking for a more full and complete response.

On September 1, 1999, K1MAN voluntarily put his IARN broadcasts on "hold" in order (according to Baxter) to devote more time to his litigation against the FCC. He says he will be back on the air later this year. Baxter's last IARN transmissions took place on August 31st.

On December 1, 1999, the U.S. District Court in Maine dismissed with prejudice Baxter's lawsuit against the FCC (which means it can't be brought back into the court again) and his *Petition for Reconsideration* of the dismissal.

On February 23, 2000, K1MAN filed an *"Appeal of Dismissal with Prejudice"* with the U.S. District Court for the District of Maine. In his appeal, Baxter says that he is being denied his right to appeal since the FCC has failed to act thereby blocking his access to the D.C. Court of Appeals.

He added "When an FCC official announced publicly [a year ago] ...that all fines ...had been canceled with no other notification to the appellant, both the FCC and the D.C. Court of Appeals lost subject matter jurisdiction over this case."

Baxter said in the appeal document that he is licensed by the FCC "...to transmit non-commercial commentary and other information radio signals on amateur radio short wave frequencies that can be heard world wide by radio enthusiasts...."

He added, "On September 21, 1990, after the editorial content ...became critical of FCC politics, the Commission, in bad faith wrongfully and maliciously issued a \$1,500 fine ...alleging 'willful interference'... The FCC then issued a press release ...which was reprinted in the January 1991 issue of QST magazine [which] caused great damage to [my] international reputation."

Baxter said he appealed the fine but "No action has ever been taken to adjudicate this appeal, thus denying [his] First Amendment right to '*Petition the Government for a Redress of Grievances*.'" Baxter said he was libeled again on December 28, 1992, in a FCC letter to a Congressman (Senator Howard Metzenbaum of Ohio) which stated he participated in "...illegal broadcasting and deliberate interference."

He wants the appellate court to reverse the District Court's dismissal and to remand the case back to the District Court for trial by jury.



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## AMATEUR RADIO STATION CALL SIGNS

...sequentially issued as of the first of March 1, 2000:

| Radio District | Group A Extra | Group B Advanced | Group C Tech/Gen. | Group D Novice |
|----------------|---------------|------------------|-------------------|----------------|
| 0 (*)          | AB0JY         | KI0RL            | (***)             | KC0HHU         |
| 1 (*)          | AA1UX         | KE1LT            | (***)             | KB1EVZ         |
| 2 (*)          | AB2GX         | KG2RI            | (***)             | KC2FZM         |
| 3 (*)          | AA3TG         | KF3DU            | (***)             | KB3EQL         |
| 4 (*)          | AF4QW         | KV4EN            | (***)             | KG4GMO         |
| 5 (*)          | AC5TT         | KM5WZ            | (***)             | KD5JIL         |
| 6 (*)          | AD6JW         | KR6EA            | (***)             | KG6AKD         |
| 7 (*)          | AC7BX         | KK7VW            | (***)             | KD7IAX         |
| 8 (*)          | AB8EY         | KI8JP            | (***)             | KC8NWO         |
| 9 (*)          | AA9XQ         | KG9QP            | (***)             | KB9VVO         |
| N. Mariana     | NH0P          | AH0BB            | KH0IK             | WH0ABJ         |
| Guam           | (**)          | AH2DN            | KH2UU             | WH2ANX         |
| Hawaii         | WH7T          | AH6PZ            | KH7ZE             | WH6DGG         |
| Am.Samoa       | AH8R          | AH8AI            | KH8DO             | WH8ABF         |
| Alaska         | AL0T          | AL7RP            | KL0VY             | WL7CVD         |
| Virgin Isl.    | (**)          | KP2CP            | NP2KR             | WP2AIN         |
| Puerto Rico    | WP3F          | KP3BL            | WP3GO             | WP4NOT         |

\* = All 1-by-2 & 2-by-1 Group "A" call signs allocated. Group "A": 2-by-2 format call signs now being assigned.

\*\* = All 2-by-1 call signs have been assigned.

\*\*\* = Group "C" (N-by-3) call signs have now run out in all call districts. Group "D" (2-by-3) format call signs are now being assigned

Note: New prefix numerals now being assigned in Puerto Rico (KP3/NP3/WP3), Hawaii (AH7/KH7/WH7) and Alaska (AL0/KL0)

[Source: FCC Amateur Service Database, Washington, DC]

## NEW AND UPGRADING AMATEUR STATISTICS

For the Month of February 1998, 1999 & 2000

| License Class    | New Amateurs |               |               | Upgrading Amateurs |              |               |
|------------------|--------------|---------------|---------------|--------------------|--------------|---------------|
|                  | 1998         | 1999          | 2000          | 1998               | 1999         | 2000          |
| Novice           | 54           | 60            | 52            | 0                  | 0            | 0             |
| Technician       | 943          | 1168          | 1106          | 39                 | 1            | 0             |
| Tech Plus        | 122          | 109           | 107           | 264                | 300          | 531           |
| General          | 27           | 17            | 14            | 253                | 233          | 198           |
| Advanced         | 1            | 0             | 2             | 209                | 241          | 210           |
| Extra Class      | 3            | 1             | 1             | 109                | 116          | 207           |
| <b>Total:</b>    | <b>1150</b>  | <b>1355</b>   | <b>1282</b>   | <b>874</b>         | <b>891</b>   | <b>1146</b>   |
| <b>Decrease:</b> | <b>(50%)</b> | <b>+26.5%</b> | <b>(5.4%)</b> | <b>(32%)</b>       | <b>+1.9%</b> | <b>+28.6%</b> |

The big news here is the number of Amateurs upgrading as existing Advanced Class amateurs want the "bragging rights" that come with passing the 20 wpm code exam. Also, the number of Techs that passed 5 wpm code so far this year is up 108.4% - more than double. (Jan./Feb. 1999 = 459 and Jan./Feb. 2000 = 989!) Looks like a lot of Technicians will be grading up now that the top code requirement goes to 5 wpm on April 15th!

■ The Phase 3D next generation Amateur Radio satellite has now arrived at the European Spaceport in Kourou, French Guiana. Accompanied by Integration team members Bob Davis, KF4KSS and Jay Ramdas, the satellite was flown from Orlando, Florida to Kourou via Paris. AMSAT-DL's Peter Güllzow, DB2OS, P3-D operations manager, joined the flight in Paris. Operated by ESA (the European Space Agency), Kourou is located just 5° north of the equator on the northern coast of South America.

The satellite is stored in its shipping container in the clean room at the Ariane 5 Final Assembly Building at the AR5 launch preparation area. It will remain there until the start of the launch countdown. With all systems turned off and flight batteries uncharged, no personnel are required on location. AMSAT P3-D now becomes the first secondary payload for an Ariane 5 rocket launch.

The satellite could launch as early as late July according to a posting on the AMSAT-NA web site. The launch is listed in the "Provisional Ariane Launch Manifest" for February through July of this year appearing in the February edition of the Arianespace newsletter, <[http://www.arianespace.com/news\\_espace.html](http://www.arianespace.com/news_espace.html)>. The newsletter said that Phase 3D was compatible with 5 or 6 Ariane launches planned for 2000.

If the schedule holds, the Phase 3D satellite would be orbited on Ariane 507, flight V132. The specific date in July was not available. Once a date is known AMSAT personnel will begin final payload processing, including the installation of the solar panels and main engine, charging P3D's batteries and final weighing and fueling.

A launch contract accepting Phase 3D as a payload for the first suitable Ariane 5 launch vehicle was signed last October. For more information about Phase 3D, visit the AMSAT-NA Web site, <<http://www.amsat.org/>>

Want to visit Kourou, French Guiana? Check out: <<http://www.esa.int/launchers/>> and click on "Visit Kourou." There is also interesting information at this site on the Ariane 5 launcher and how it works.

Several ham satellite enthusiasts took part in the Y2K edition of *Straight Key Night* on OSCAR, a long time AMSAT tradition. AMSAT's Ray Soifer, W2RS reminded all satellite operator's to mark their calendars for the 29th edition of SKN, noting that next year, "...hopefully SKN will take place on Phase 3D!" [Thanks DB2OS, AMSAT-NA, ARRL, W2RS]

■ Herb Johnson, W6QKI, who founded Amateur Radio equipment manufacturer Swan Electronics in the 1960s died February 1st. Johnson was 79 and had been in ill health for several years. Swan Electronics (then Swan Engineering,) began during the winter of 1960 - 1961 as a one-man operation with Johnson, then W7GRA, building the first 10 Swan SSB rigs in his garage!



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## CUTTING EDGE TECHNOLOGY

■ **The Earth and Moon Viewer** located at <http://www.fourmilab.ch/earthview/> allows you to pick any point on earth and view it from one of the hundreds of satellites that orbit around our planet. Shows day and night anywhere on earth. Because images are updated so frequently, it's almost as if you're looking at yourself from space in real time. See what the astronauts on Mir can see and check out the views of the moon too. A really neat site! North American mirror site at: <http://www.fourmilab.to/earthview/> A neat programming job with the satellite tracking code lifted directly from a package called *N3EMO Orbit Simulator* developed by Robert W. Berger, N3EMO (Advanced Class) of Pittsburgh, PA.

■ **The new Sacajawea (Yes! That's the name!) dollar coin is now in circulation.** You can spot it easily among your change because of its gold color. The U.S. Mint would like people to use dollar coins instead of dollar bills, because coins last so much longer and therefore save money. Not many vending machines can accept the new \$1 coin yet, but those that can accept the old Susan B. Anthony coin will accept the new one. This is because the Mint specifically designed the metal alloy of the Sacajawea coin to match that of the S.B.A. coin, so that the electronic sensors inside vending machines won't be confused. Owners of vending machines won't have to retrofit them if the S.B.A. coins already work in them.

■ **Are you interested in collecting old insulators** -- the porcelain/glass devices that telephone, telegraph and electrical wires are strung between? Plenty of people gather together to buy, sell and trade them. Some rare insulators are worth considerable money to collectors. Hobbyists have gathered detailed histories on several brands of the devices, too. If you're looking to buy some, or know where there's a small mountain of them, you can contact several clubs such as the Insulator Collections On the Net (ICON) at <http://www.insulators.com> or the National Insulator Association at <http://www.nia.org> (which offers a newsletter called "Drip Points" and information on local shows).

■ **Don't take your HT to the Arecibo radio telescope facility in Puerto**

**Rico.** Portable transceivers aren't allowed on the property because of the ultra-sensitive antennas that listen for anything from HF to SHF. Even computers that aren't shielded properly may insert unwanted RFI into the radio noise being gathered from deep space. One of the most powerful radio telescopes in the world, Arecibo's receiving dish is built into a natural valley and its low-noise amplifiers are supercooled with liquid helium to reduce electron noise even further.

■ **Maytag is releasing a new type of oven for the kitchen that combines both microwave heating and convection heating.** The addition of a moving blanket of hot air moving precisely around the food heats it more thoroughly and more effectively than either a conventional oven or a microwave oven. Combining the technologies means your meal can be ready as much as five times faster.

■ **Tired of locating a particular plug in the forest of power cables in your shack?** Qualtek Electronics Corp. makes a new type of power strip that ties three power cords together into one. Most computer-based devices use the same type of power cord, so the new three-into-one Tri-Cord powers three devices but takes up only one plug in an outlet.

■ **Tandy Corp. -- parent of Radio Shack -- has just opened its first "RadioShack.com" store in Denver.** It is really a store version of its Web site. It is about ten times larger than a Radio Shack store and carries all 22,000 products that the Web site features. The RadioShack.com store is actually a re-vamped Tech America store, which was a brief attempt by Tandy to create specialty stores geared to do-it-yourselfers who wanted to build their own computers, radios and sound-recording systems. Tandy will convert two other former Tech America stores -- one in Atlanta and one in Phoenix -- to RadioShack.com formats.

■ **One might call them nothing more than open circuits, but ultra-high-value resistors are still in demand.** Ohmcraft makes both leaded and chip resistors in values as high as 1, 2 and 5 teraohms. Geiger counters, electrometers and other high-voltage devices make use of resistors that reach into the trillions of ohms.

■ **You can often find a trouble spot in an unjacketed fiber-optic cable just by looking at it.** This requires a little

help, through a visual fault locator. The device uses a high-power laser diode to inject bright light into the end of the fiber. Cracks show up easily because of the difference of light refraction, just like finding a crack in a windshield. A visual fault locator helps localize cable faults when an optical time-domain reflectometer can't localize them beyond a certain range.

■ **Can't install a skylight in your house because of obstructions in the attic?** SolaTube International's tubular skylight may be your answer. It uses a large-diameter tube with highly reflective material on the inside walls to redirect incoming sunlight from the roof window to the downstairs target -- just like a big, fat fiber-optic cable.

## COMPUTER INFO

■ **With millions of dollars sunk into research, development and debugging, Microsoft understandably wants to discourage software pirates.** They are now making use of a high-tech anti-counterfeiting technique that embeds a hologram onto the surface of a CD-ROM. It is impossible to copy or remove because it is part of the disc itself and trying to alter it will destroy the data. Anyone looking at the disc will easily see the hologram and know that it's a genuine product. The technique is also being used on DVD discs.

■ **Be on the lookout for a new computer virus called the "South Park Trojan."** It e-mails itself to victim's e-mail address book entries every 30 minutes. The virus, first discovered about a month ago, has the capability to bog down e-mail systems since it generates so many messages. It is dubbed "South Park" after an image of the cartoon-show character "Kyle." The subject line of the message is `c:/coolprogs/pretypark.exe`. The virus is a variant of the Pretty Park virus that originated in France. It arrives via email from affected users who have also run this Internet "worm".

A "worm" is a program that is similar to a virus which spreads from one computer to another in the form of an attachment to e-mail messages and newsgroup posts.

Usually what happens is that somebody sends you a legitimate e-mail message, and without the sender's knowledge, the worm generates a second e-mail mes-



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sage that is also sent to you.

It appears as an icon of a character from the animated comedy series "South-park". E-mails containing this worm virus have a file attached named "PrettyPark.exe" or "Pretty ~ 1.exe". Do NOT open it by double clicking on the attachment.

## INTERNET NEWS

■ According to new report out of Geneva, **many developing countries are falling behind in the "information age" because of lack of money, skills and infrastructure.** The report concludes that improving Internet access is the most cost-effective way to reduce the growing "digital divide" between rich and poor countries. The report shows that one in six people used the Internet in North America and Europe in the late 1990s compared to one in 5,000 in Africa.

## EMERGING COMMUNICATIONS

■ **With digital data transmissions reaching well into the GHz range, it's comforting to know that some Amateurs still treasure the old circuits.** The Xtal Set Society is still going strong, offering hobbyists the chance to build their own AM radio receivers out of oatmeal boxes, galena crystals and lots of wire. The Society offers books and other merchandise. You can reach the Xtal Set Society at P. O. Box 3026, St. Louis, MO 63130 or on the Internet at <<http://www.midnightscience.com>>.

■ **Most TV stations don't keep engineers out at the transmitter all the time, since it costs a lot of money.** But if trouble develops, they lose even more money when it takes half an hour or more for the engineer to drive out to the site. Some stations now make use of a digital link between the studio and the transmitter. It takes digital snapshots of the waveform monitor and/or vectorscope at the transmitter, and sends those images once a minute to the studio. The engineer can call up the waveform image from his desktop computer and identify trouble before he heads out to the truck.

■ **Do your neighbors have HDTV yet?** Perhaps you can tell by their roof antennas. Some new antennas designed for high-definition TV use helical coils,

with back reflectors to cut down on multipath reflections. Since HDTV's band is up in the UHF range, the new antennas are physically smaller. A drawback to digital television is that either you see it, or you don't... getting the outside antenna as high up into the air as necessary to grab the signal may mean cutting down some trees or moving the antenna to another, clear location. This might mean newer HDTV antennas will require more gain, and therefore become more directional.

■ **Having trouble trying to figure out which "Nickel-a-Minute" telephone program is best for you - or how to read your phone bill?** Well, you are certainly not alone! There is a neat website that can help you compare one service against another. Check out <<http://www.abelltolls.com>>.

There are three additional charges on your long distance phone bill (and they can be called almost anything by the carrier!) They are the SLC (subscriber line charge), the PICC (the Presubscribed Interexchange Carrier Charge) and the USF (Universal Service Fund charge.)

The SLC is a monthly charge for bringing a phone line into your home, the PICC goes to local phone companies for providing their system to long distance carriers and the USF charge goes into a federally managed fund to help pay for low income, rural and library/school telephone/Internet hookups.

The monthly PICC flat fee is set at \$1.04 per month and the USF fee is 5.9% of your long distance calls. But carriers can charge what they want - and they do. These costs are all over the lot!

It is absolutely amazing the number of different (and confusing) billing plans that are out there! Some LD services have low per minute rates but a high minimum monthly billing charge. Others have low (such as 3¢ a minute) rates, which doubles after the first 60 days. Some rates are only offered in specific areas or during certain off peak (week end/night) times. Some offer additional features (3-way calling, call waiting, caller ID, etc.) Some rates automatically drop every 90 days. Some may only be billed to a credit card. One thing seems certain. The 5¢ a minute phone call usually does not exist when you read the fine print.

"Dial-around" services - those that you use by first calling a toll free number or the numbers "10-10" first - have no monthly fee or minimum usage requirements. You do not have to change your

long distance carrier to use these services.

So who has the lowest rate? Well after reviewing more than a hundred different plans, we think (but are not sure) that it is the "dial around" plan offered by WorldXChange. It is available 24 hours, 7 days a week. Here's their plan.

You dial 10-15-335 (and enter an activation code 208288 at the prompt - you only do this once) and your long distance calls (both in and out of state) are 4¢ a minute. But here is the catch. The first minute is billed at 40¢ and the next nine minutes are free - then a flat rate of 4¢ a minute applies. So your calls MUST last more than 10 minutes to get the 4¢ rate. You still pay 40¢ for every completed call including those to short calls like voice mail or answering machines. And it is not available in AK, CA, CT, HI, ME, ME, NC, ND, SD and WV.

The second cheapest rate we found was Vartec's "Clear Choice 5Talk" 10-10-636 dial-around service. Cost is 15.7¢ for the first three minutes and then 5.2¢ afterward. (Except AK, CA, HI, MS.) Info at: 1-800-380-0546

The most widely promoted "dial-around" services (and necessarily more expensive) are run by MCI/Worldcom and AT&T. MCI's 10-10-220 "dial-around" service is 99¢ with a 20 minute minimum per call then it goes to 7¢ a minute. MCI's 10-10-321 is \$1.60 for a 10 minute minimum interstate calls then it drops to 8¢ a minute. AT&T's 10-10-345 is 10¢ per minute plus a 10¢ connection fee with a two minute minimum.

MCI/Worldcom uses an alias ("Telecom USA") ...as does AT&T ("Lucky Dog") so as not to annoy their regular customers who pay more. There are no SLC (line charges), PICC (service charges) or USF (universal service) fees with the 10-10 dial-arounds of WorldXchange, Telecom USA or "Lucky Dog." Again, check out: <<http://www.abelltolls.com>>

## WASHINGTON WHISPERS

■ **Update your NASA links and bookmarks!** NASA has now deactivated their <<http://shuttle.nasa.gov/>>, <<http://station.nasa.gov/>> and <<http://shuttle-mir.nasa.gov/>> Internet sites and consolidated them into a new website called the Human Space Flight Web. It is located at <<http://spaceflight.nasa.gov/>>. Visitors to the old space shuttle, Mir and



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International Space Station (ISS) webpages will be referred to the [spaceflight.nasa.gov](http://spaceflight.nasa.gov) address.

The NASA International Space Station (ISS) will be the first laboratory complex where gravity can be controlled for extended periods of time. You can follow its progress at this site. It offers regular updates and information on all aspects of the mission including the station's construction plus educational material. The International Space Station, while still unmanned, is in an orbit of 235 by 226 statute miles and since 1998, the ISS has completed more than 7,320 orbits. (The NASA headquarters website still continues at: <http://www.nasa.gov/>)

■ **As more and more voice, data and Internet access services go wireless, the demand for radio frequencies is outpacing supply** says FCC chairman Bill Kennard. Federal regulators are now looking at new ways to make more frequencies available faster.

"Our biggest challenge is the dwindling supply of quality spectrum," said Kennard, addressing the recent *Cellular Telecommunications Industry Association* (CTIA) convention in New Orleans.

He suggested that license holders that aren't using all of their frequencies should be able to post that availability on a Web site for other interested companies.

The FCC will be auctioning ("selling") frequencies shortly that are could be used for delivering wireless Internet service to home and handheld computers. This spectrum, currently used by analog TV channels 60 to 69, will become available as broadcasters transition to digital.

Kennard is urging broadcasters currently occupying those analog channels to voluntarily negotiate deals with the auction winners so that the airwaves can start being put to use to provide new wireless services sooner.

■ **The U.S. Department of Energy now requires that all ballast transformers in new and restored fluorescent light fixtures -- both for commercial and industrial applications -- be of the electronic type instead of magnetic within the next five years.** The switch allows for more efficient energy use, saving money and also eases eyestrain by increasing the flicker rate to above perceptible levels. Well over a third of a building's electric bill pays for lighting.

## AMATEUR RADIO

■ **April 14, 2000 is the last day that an Amateur license applicant can take the Tech Plus (or a Novice or Advanced Class) operator license test.** After that date, Technician Class amateurs who pass a 5 wpm code test will receive only a CSCE (*Certificate of Successful Completion of Examination*) instead of a Tech Plus license.

Since the FCC needs a 20 day period for applications to get from the VE team to the VEC who electronically file the application, the FCC will continue to grant Tech Plus licenses until May 4. (According to the rules, a VE team has 10 days to get an application to the VEC -- and the VEC also has 10 days to file the application.)

**After 5/4/00 the FCC will no longer grant new Tech Plus, Novice, or Advanced Class licenses.** Late handled applications for these licenses will not be acted on by the FCC! However, any class may modify (that is, change an address, call sign, name, etc.) and their license and the class will remain the same.

**Only at renewal time will the FCC change Tech Plus licenses to Technician,** all other classes (including Novice and Advanced) will renew as is. Tech Plus licensees who just change their address will still receive a Tech Plus license with the original expiration date.

■ **The Dayton Amateur Radio Association has announced its Annual Ham-Venture Award Winners. For the Year 2000, Radio Amateur of the Year is famed DXer Martti Laine, OH2BH.** Long considered as ham radio's number one ambassador of international good will, Laine is the person responsible for activating numerous new DXCC countries on the amateur airwaves ...many times traveling under difficult and often dangerous conditions. Laine is also the only person ever to be inducted into both the CQ DX Hall of Fame and the CQ Contest Hall of Fame. He is a QST author of many other articles dealing with the DX world.

**The Special Achievement Award goes to retired FCC veteran staffer A. Prose Walker, W4BW** for his early involvement in developing the concept of obtaining new amateur radio frequency allocations. Walker headed up the *Amateur and Citizens Division* during the early 1970's. W4BW first went public on HF ham band expansion in a speech to the

Swiss Amateur Society in Geneva 1974. It was under his leadership that ham radio received the so-called WARC bands at 10, 18 and 24 MHz. He also headed up the *Amateur Radio Working Group* in preparation for the 1979 World Administrative Radio Conference. Walker was the guiding force behind the development of the *Advisory Committee of Amateur Radio* and served as its first chairman.

**The Technical Achievement Award winner Dr. H. Paul Shuch, N6TX** is executive director of the SETI League. He is being honored for his pioneering work of the 1970's in VHF, UHF and microwave receiver design. Dr. Shuch is also being recognized for his recent design of amateur radio astronomy equipment used in the SETI (*Search for Extra Terrestrial Intelligence*.) Shuch has authored many technical articles and is an ARRL Life Member. He was the 1996 Dayton Ham-Venture banquet speaker.

**HamVenture 2000, held this year May 19-21, will host the ARRL National Convention for the first time.** The awards will be presented to OH2BH, W4BW and N6TX at the annual HamVenture Saturday evening banquet on May 20 where the FCC's Special Counsel for Amateur Radio Enforcement Riley Hollingsworth K4DZH will be the keynote speaker. [Thanks: DARA]

■ **The WSYI Group has a new book out entitled "The New Pools"** which contains all of the new ham radio operator examination questions, diagrams, multiple choices and answers for the new Technician, General and Extra Class written exams that begin on April 15, 2000. (256 pages. \$9.95 plus \$4.00 Priority Mail s/h. Tel. 1-800-669-9594 to order.)

■ **It has been brought to our attention that there is an error in our write-up on Amateur radio license examination credit for the General Class that appeared in our last issue**

To qualify for a General class license starting April 15, 2000, applicants must present valid credit for Elements 1, 2, and 3 at a volunteer examiner session. Those who held a Technician license, now expired or otherwise, prior to March 21, 1987, may claim Element 1 (5 words-per-minute Morse code) and new Element 3 (current Element 3B, General exam) credit.

Those who held a Technician license, now expired or otherwise, prior to February 14, 1991, may claim only Element 1 credit, as may anyone who has ever held a Novice ticket. **The FCC rules provide**



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**Element 2 credit only for individuals who are currently licensed (or within the two-year grace period for renewal).**

This means that before applying for a General license, a former amateur licensed as a Technician prior to March 21, 1987, and no longer licensed or within the two-year grace period for renewal, also must pass the Element 2 examination.

To currently qualify for the Technician license (which conveys Element 2 credit) requires passing a 65-question two part exam (Novice and Technician) now. Starting April 15, Element 2 will be a single 35-question exam. [Thanks Bart Jahnke W9JJ, AR/VEC.]

■ **AMATEUR RADIO ENFORCEMENT:** The FCC has warned **Jose C. Moreno Cueto KP4ZY (Advanced Class)** of Mayaguez, Puerto Rico that it has evidence of his intention interference to the ACM4PR MARS repeater system operating on 148.010/143.990 MHz. MARS frequencies are not available to him and further operation will result in a fine and revocation proceedings.

■ **Jerry W. Cartner, K4JWC** and **James W. Walls, NC4JW** (both Advanced Class) of Salisbury, NC have been notified that the FCC has information indicating that they have been using higher power FM and LSB ham radio equipment on the Citizens Band and other frequencies. This activity jeopardizes their Amateur Radio licenses and constitutes unlicensed operation. The FCC also said it appears they have been offering equipment for sale, over the air on those frequencies that do not meet the Commission's certification standards. They have been given 20 days to answer the charges in writing.

■ **Charles Schwartzbard, AF2Y (Extra Class)** of Clifton, NJ has been warned for the second time that the FCC again has monitoring information that "...you have engaged in deliberate interference to the ongoing communications of W4FQF and KB4MXL on the 20 meter Amateur band." He has been notified that "if legitimate complaints or our monitoring reveal additional instances of this behavior, we intend to designate your Amateur Station licenses for a revocation hearing... We again caution you that airing personal conflicts with other licensees on the Amateur bands will result in loss of your Amateur license."

■ **Donald H. Rainwater, KY6W (Extra Class)** of Thousand Oaks, CA has

been warned by the FCC about his 40 meter communication content. "The Commission's rules prohibit Amateur stations from transmitting obscene or indecent words or language." He was advised "...that, for indecency purposes, the Commission treats Amateur transmissions the same as commercial broadcasts."

"Obscene speech is not protected by the First Amendment and cannot be broadcast at any time. To be obscene, material must meet a three prong test: (1) an average person, applying contemporary community standards, must find that the material, as a whole, appeals to the prurient interest; (2) the material must depict or describe, in a patently offensive way, sexual conduct specifically defined by applicable law; and (3) the material, taken as a whole, must lack serious literary, artistic, political or scientific value."

"The Commission defines indecency as language or material that, in context, depicts or describes, in terms patently offensive as measured by contemporary community standards, sexual or excretory activities or organs. The Supreme has repeatedly rejected arguments that this definition is unconstitutionally vague."

Rainwater was warned that "Operation of the type described above is contrary to the basis and purpose of Amateur Radio, degrades the service for legitimate users. ...[and] will result in a monetary fine being levied against you and in revocation proceedings before an Administrative Law Judge."

■ **Gerald J. Friedal, WB9CIK (General Class)** of Apple Valley, CA was warned that the FCC had information that he has "...been deliberately and maliciously interfering" with the KE6TZG repeater including "...playing tapes and music to jam the repeater, making threats to other Amateurs, as well as profanity and obscenity" The FCC said it had information that this activity also took place on the 40 meter ham band. Additional operation of this type will result in a fine and in revocation proceedings, Hollingsworth said.

■ The General Class license of **Jeffrey J. Pipenur, WA8IKW (General Class)** of Vandolia, OH has been renewed for just one year. Pipenur had previously been asked to explain a tape recording involving "...deliberate interference, poor Amateur practice and operation contrary to ...the Commission's rules..." After considering his response, both the FCC and WA8IKW have agreed to a "short term renewal." A ten year term will be routinely granted after March 1, 2001 if

there are no further violations.

■ **Frederick J. Roll, NU5M (Extra Class)**, of Augusta, GA was also asked to explain a tape recording of transmissions made from his station on November 13, 1999. The FCC said "Your response appears to focus blame on the other operator rather than explaining your own operation..." He was issued a warning notice that further incidents will result in enforcement action.

■ The FCC said it has received numerous complaints of malicious interference and jamming of the 147.000 MHz Kalamazoo Amateur Radio Club repeater apparently originating from the station of **Allan J. Stapp, Jr., N8OKU (Tech Plus)** of Bangor, MI. "Some of the interference consists of sound effects, unidentified transmissions and keying over ongoing transmissions." N8OKU was warned that further instances of "...legitimate complaints or our monitoring" will result in his license being designated for revocation.

Riley Hollingsworth also noted that "...on February 8, 1998 [Stapp] entered a guilty plea in local District Court to interfering with the transmission of public safety messages. You were sentenced to 9 months probation and ordered to surrender all 2-meter Amateur equipment for a period of 9 months." Further interference will result in this matter being referred to the Prosecuting Attorney.

■ **Kevin M. Wilson, KD4UMF (Advanced Class)** of Cullman, AL has been warned that the FCC "...has received complaints regarding the operation of your Amateur station on the Blount County Amateur Radio Club repeater, W4BLT operating on 146.700 MHz. The complaints allege malicious interference, playing music and broadcasting." Hollingsworth said additional incidents will result in a fine and revocation proceedings. "Additionally, you are expected to comply with the recent letter from the Control Operator of the repeater requesting you to cease operation on the W4BLT repeater."

■ **Timothy I Stone, WW4TIM (Extra Class)** of Zephyrhills, FL also has been warned by the FCC for allegedly interfering with various Amateur repeater systems in North Central Florida while operating mobile from a truck. The interference which occurred over the past 2 years included unidentified transmissions, jamming and keying 2-meter repeaters.



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## AMATEUR SERVICE CENSUS - INDIVIDUAL STATIONS MARCH 1, 2000

|                    | <u>STATE</u>         | <u>EXTRA</u>  | <u>ADVANCED</u> | <u>GENERAL</u> | <u>TECH PLUS</u> | <u>TECHNICIAN</u> | <u>NOVICE</u> | <u>TOTAL</u>   |
|--------------------|----------------------|---------------|-----------------|----------------|------------------|-------------------|---------------|----------------|
| AK                 | Alaska               | 351           | 467             | 527            | 530              | 1090              | 207           | 3172           |
| AL                 | Alabama              | 1215          | 1563            | 1596           | 1998             | 3614              | 459           | 10445          |
| AR                 | Arkansas             | 800           | 987             | 960            | 1243             | 2460              | 353           | 6803           |
| AZ                 | Arizona              | 1701          | 2412            | 2402           | 2832             | 5279              | 694           | 15320          |
| CA                 | California           | 8883          | 13646           | 13478          | 19943            | 37775             | 9555          | 103280         |
| CO                 | Colorado             | 1362          | 2005            | 1880           | 2357             | 3678              | 718           | 12000          |
| CT                 | Connecticut          | 1106          | 1324            | 1601           | 1624             | 1820              | 860           | 8335           |
| DC                 | District of Columbia | 64            | 83              | 103            | 54               | 75                | 35            | 414            |
| DE                 | Deleware             | 202           | 208             | 257            | 295              | 337               | 96            | 1395           |
| FL                 | Florida              | 4599          | 7096            | 8214           | 7475             | 9026              | 3551          | 39961          |
| GA                 | Georgia              | 1676          | 2421            | 2329           | 2945             | 4294              | 818           | 14483          |
| HI                 | Hawaii               | 383           | 446             | 479            | 592              | 1012              | 275           | 3187           |
| IA                 | Iowa                 | 773           | 1243            | 1222           | 1110             | 1588              | 503           | 6439           |
| ID                 | Idaho                | 393           | 579             | 672            | 789              | 1642              | 202           | 4277           |
| IL                 | Illinois             | 2677          | 3598            | 3899           | 4493             | 6201              | 1830          | 22698          |
| IN                 | Indiana              | 1573          | 2162            | 2411           | 3197             | 4399              | 1071          | 14813          |
| KS                 | Kansas               | 759           | 1048            | 1321           | 1434             | 2159              | 529           | 7250           |
| KY                 | Kentucky             | 998           | 1147            | 1313           | 1709             | 2979              | 662           | 8808           |
| LA                 | Louisiana            | 839           | 1167            | 1144           | 1278             | 1947              | 464           | 6839           |
| MA                 | Massachusetts        | 2076          | 2284            | 2690           | 2906             | 3244              | 1285          | 14485          |
| MD                 | Maryland             | 1533          | 1996            | 1889           | 2215             | 2747              | 809           | 11189          |
| ME                 | Maine                | 549           | 649             | 883            | 826              | 1143              | 310           | 4360           |
| MI                 | Michigan             | 2395          | 3231            | 3645           | 4135             | 6079              | 1303          | 20788          |
| MN                 | Minnesota            | 1252          | 1816            | 1954           | 2030             | 2895              | 673           | 10620          |
| MO                 | Missouri             | 1521          | 1997            | 2267           | 2297             | 3754              | 776           | 12612          |
| MS                 | Mississippi          | 559           | 764             | 756            | 827              | 1505              | 249           | 4660           |
| MT                 | Montana              | 331           | 454             | 513            | 547              | 1029              | 188           | 3062           |
| NC                 | North Carolina       | 2132          | 2819            | 2866           | 3469             | 5592              | 1378          | 18256          |
| ND                 | North Dakota         | 160           | 217             | 307            | 313              | 461               | 98            | 1556           |
| NE                 | Nebraska             | 420           | 681             | 814            | 777              | 939               | 252           | 3883           |
| NH                 | New Hampshire        | 728           | 701             | 830            | 999              | 1326              | 341           | 4925           |
| NJ                 | New Jersey           | 2145          | 2682            | 2827           | 3279             | 3398              | 1453          | 15784          |
| NM                 | New Mexico           | 593           | 890             | 765            | 883              | 1923              | 191           | 5245           |
| NV                 | Nevada               | 506           | 699             | 777            | 831              | 1499              | 209           | 4521           |
| NY                 | New York             | 3798          | 4870            | 5551           | 6555             | 8599              | 3428          | 32801          |
| OH                 | Ohio                 | 3308          | 4394            | 4726           | 6862             | 8712              | 2163          | 30165          |
| OK                 | Oklahoma             | 989           | 1330            | 1237           | 1676             | 3224              | 505           | 8961           |
| OR                 | Oregon               | 1346          | 1985            | 2378           | 2549             | 3838              | 819           | 12915          |
| PA                 | Pennsylvania         | 3183          | 3968            | 4456           | 4979             | 5766              | 1817          | 24169          |
| PR                 | Puerto Rico          | 311           | 539             | 765            | 1894             | 1018              | 2292          | 6819           |
| RI                 | Rhode Island         | 339           | 315             | 452            | 549              | 493               | 227           | 2375           |
| SC                 | South Carolina       | 821           | 1059            | 1256           | 1331             | 1912              | 374           | 6753           |
| SD                 | South Dakota         | 189           | 296             | 304            | 261              | 408               | 111           | 1569           |
| TN                 | Tennessee            | 1650          | 2193            | 2096           | 2937             | 4194              | 740           | 13810          |
| TX                 | Texas                | 5065          | 6988            | 6565           | 7801             | 12597             | 2138          | 41154          |
| UT                 | Utah                 | 531           | 789             | 725            | 1719             | 4337              | 346           | 8447           |
| VA                 | Virginia             | 2224          | 2832            | 2741           | 3360             | 4583              | 1119          | 16859          |
| VI                 | Virgin Islands       | 46            | 39              | 66             | 42               | 87                | 21            | 301            |
| VT                 | Vermont              | 294           | 304             | 367            | 403              | 729               | 124           | 2211           |
| WA                 | Washington           | 2530          | 3467            | 3904           | 4800             | 7716              | 1511          | 23928          |
| WI                 | Wisconsin            | 1247          | 1702            | 1871           | 1897             | 3152              | 623           | 10492          |
| WV                 | West Virginia        | 638           | 697             | 891            | 1188             | 2595              | 379           | 6388           |
| WY                 | Wyoming              | 196           | 231             | 253            | 280              | 535               | 86            | 1581           |
| Other              | AP0 & Possessions    | 191           | 153             | 191            | 252              | 686               | 79            | 1552           |
| <b>Total</b>       |                      | <b>76140</b>  | <b>103633</b>   | <b>110386</b>  | <b>133567</b>    | <b>204090</b>     | <b>51299</b>  | <b>679115</b>  |
| <b>% of total:</b> |                      | <b>11.21%</b> | <b>15.26%</b>   | <b>16.25%</b>  | <b>19.67%</b>    | <b>30.05%</b>     | <b>7.55%</b>  | <b>100.00%</b> |



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## Ham Help Groups on the Internet

Some would say that the Internet is killing Amateur Radio. A closer look, however, reveals that the Internet is actually allowing Amateurs to enjoy their hobby even more by the instant exchange of information. No longer do you have to contact equipment manufacturers, write questions to magazine help columns, or hope you talk to the right person on the air to get a particular question answered. Now, just point, click, and type your way to the answers you want. And it's practically instantaneous.

The precursor to the Internet was the BBS – the computer bulletin board. Thousands upon thousands of these miniature digital networks dotted the landscape a little more than a decade ago. But they lacked cohesiveness, a means of linking themselves together worldwide in real time. And they were separated according to a wide range of subjects. It also sometimes cost money to make a long-distance phone call to find the BBS that you hoped could help you figure out how to use your latest ham software or what kind of antenna this was that you'd just bought at a hamfest.

Newsgroups on the Internet have replaced yesterday's bulletin boards. There are hundreds of them, arranged by topic. If you've got a particular question about your rig, an oscilloscope, satellites, DX'ing, etc., you have a wide range of newsgroups to look through. Plenty of messages are posted daily. Hams leave messages asking questions, and other hams with the answers provide them. It's all part of the fun.

If you haven't explored these Internet newsgroups, here's a listing of some of the more interesting ones.

- **rec.radio.amateur** – A collection of information about all items regarding Amateur Radio.
- **rec.radio.amateur.antenna** – The major hangout for antenna experts. If you need help learning how to tune your J-pole or want to know more about how well a particular brand of ham antenna works, just look here.
- **rec.radio.amateur.boatanchor** – If you're shopping for parts for an old rig, look here first. Lots of hams have "boat anchors" in the shack – old rigs that don't work but are too full of memories to throw away. Often old radios are the best places for large tuning capacitors, vacuum tube sockets, etc.
- **rec.radio.amateur.digital.misc** – A busy newsgroup dedicated to digital data on the ham bands. If you want to know more about AMTOR, RTTY, and the newest transmission methods, this is the place.
- **rec.radio.amateur.dx** – The bands have opened up to overseas and you can instantly let your fellow hams know who you've talked to! This is also a good place to post announcements of special stations working from DX locations.
- **rec.radio.amateur.equipment** – Who's got a microphone for a Heathkit SB-102 for sale? How can I interface a tone board for my HT? I've lost the manual for my mobile rig and the manufacturer has gone out of business; can somebody help?
- **rec.radio.amateur.homebrew** – There is a newsgroup

for people who like to make their own wine, but this isn't it. This is the place to go if you like to build your own ham gear. Where can I find toroid cores? How can I get rid of these oscillations in this circuit I've built? Does someone have a schematic for a 1-watt CW transmitter for 10 meters?

- **rec.radio.amateur.misc** – Covers ham radio topics that don't seem to fit in other ham-based newsgroups.
- **rec.radio.amateur.policy** – A hot topic these days. Excellent discussions on the rules of the air.
- **rec.radio.amateur.space** – Lots of information about Amateur satellites and SAREX. Tracking software galore.
- **rec.radio.amateur.swap** – Just like a swap meet on the air, only it's worldwide here. Buying, selling, trading, looking for parts and equipment.
- **rec.radio.scanner** – Ideal for people with scanner radios. What models are available? How can I fix my old Bearcat? I'm going to the NASCAR race this weekend – what frequencies should I listen to?
- **rec.radio.shortwave** – For people who just like to listen to the world around them, this group contains announcements, program schedules, instructions for decoding digital signals, etc.
- **sci.electronics.basics** – If you're new to Amateur Radio and want to learn more about electronics, this is the ideal place to ask questions. You can find out how to solder, read resistor color codes, test components, etc. There are lots of pointers to individual web pages that teach digital logic, display lots of simple projects to try out, and how to use test equipment.
- **sci.electronics.components** – Provides detailed information on electronic parts. How do chips work? What specific jobs do they do? How can I use them? Where can I get them? What should I be wary of?
- **sci.electronics.design** – For hams who like to design their own circuits, you can learn a great deal about circuit behavior. How can I make my circuits better? You can find pointers to schematic-drawing and circuit-analysis software here.
- **sci.electronics.equipment** – A hamfest unto itself. For people to buy, sell, trade and discuss electronic test equipment. Find replacement parts, get the dope on the history of a particular company, or unload an oscilloscope. Who's got a Nixie tube for an old frequency counter? What's the best type of digital multimeter to buy?
- **sci.electronics.misc** – Another group for covering questions that don't fit the other groups. A font of information.
- **sci.electronics.repair** – A technician's paradise. Find manuals, schematics, parts. Help someone else with a technical problem. Ideal for commercial TVs, radios, computers, monitors, stereos, etc.

Good manners call for new users to read the messages on any newsgroup for a while to get an idea of how the topics flow. Your question may already have been answered for you somewhere. Most Internet newsgroups have a collection called "Frequently Asked Questions," or FAQ for short. Periodically a newsgroup will post a message showing you how to access that group's FAQ file. Read it to find out how the group works, and what questions are often asked there. The answer you need may well be in there.